Attachment B: Questions Concerning Possible Changes to the Renewables Portfolio Standard Eligibility Guidebook

The following specific topics are not directly addressed as proposed revisions to the draft version of Renewables Portfolio Standard Eligibility Guidebook at this time. However, Energy Commission staff seeks stakeholder input on these issues before considering these topics further. To review the proposed changes to the draft RPS Guidebook in underline/strikeout format, please visit the Energy Commission's Website at http://www.energy.ca.gov/portfolio/documents/index.html, the documents will be made available by 5 pm on Monday, August 23, 2010.

1. Multi-Fuel Facilities and the De Minimis Quantity of Nonrenewable Fuels

Section 399.12(f)(3) of the Public Utilities Code states that "no electricity generated by an eligible renewable energy resource attributable to the use of nonrenewable fuels, beyond a de minimis quantity, as determined by the Energy Commission, shall result in the creation of a renewable energy credit." Under this authority, the Energy Commission determined that to count 100 percent of the electricity generated by an eligible facility toward the RPS obligations of a retail seller, at least one of three conditions must be met (these conditions as outlined in the third edition of the RPS Eligibility Guidebook are provided at the end of this attachment). For facilities that do not meet one of the three conditions, the Energy Commission allows such facilities to be RPS eligible, but only considers the electricity generation attributable to eligible renewable energy to count toward the RPS obligations of a retail seller.

The Renewables Committee proposes consideration of the following revisions to the RPS eligibility requirements for multi-fuel facilities (the revisions being proposed here are shown in red underline/strikeout text, the revisions in black underline/strikeout text are the revisions incorporated into the fourth edition draft guidebook) :

> 1. If the total annual non-renewable energy resources~~fossil fuel~~ used simultaneously to generate electricity at the facility does NOT exceed a ~~de minimus~~de minimis amount as defined in this guidebook, then 100 percent of the electricity production from the facility may count as RPS-eligible. De ~~minimus~~minimis for facilities seeking RPS eligibility is no more than 2 percent of all energy inputs~~fuels~~ used simultaneously to generate electricityand measured on an annual total energy input basis, which is to be determined by identifying all energy inputs and calculating the energy value that each input has contributed to electricity generation at the facility during each calendar year. It is the responsibility of the facility to demonstrate the ability to differentiate between energy used simultaneously to generate electricity and energy used for other purposes than simultaneous electricity generation. Note that de ~~minimus~~minimis for facilities ~~seeking~~ eligible for or receiving ~~RPS eligibility and~~ funding under the Energy Commission's Existing Renewable Facilities Program is 5 percent of all energy inputsfuels used and measured on an annual energy input basis, as long as the facility remains eligible for the Existing Renewable Facilities Program. If the facility ceases to be

eligible for the Existing Renewable Facilities Program, it must meet the 2 percent de minimis level to count 100 percent of its generation as TPS eligible.

2. In the past, the Energy Commission's Renewable Energy Program provided that renewable facilities using non-renewable energy resources~~fossil fuels~~ were eligible for funding as long as the percentage of non-renewable energy resources~~fossil fuel~~ used did not exceed 25 percent of the total energy input of the facility during a given calendar year. The Energy Commission will provide the same treatment under the RPS for renewable facilities that commenced commercial operations before January 1, 2002, were certified and operational as a renewable qualifying small power production facility (QF) pursuant to the federal Public Utility Regulatory Policies Act[1] before January 1, 2002, and are currently certified by the Federal Energy Regulatory Commission (FERC) as a renewable QF facility.

3. Any facility that was~~is developed and~~ awarded a renewable power purchase contract as a result of a 2002/2003 Interim RPS procurement solicitation approved by the CPUC under Decision 02-08-071 and Decision 02-10-062 may use up to 25 percent non-renewable energy resources~~fossil fuel~~, measured on an annual total energy input basis, and count 100 percent of the electricity generated as RPS-eligible.

The Energy Commission may allow multi-fuel facilities that use fossil fuel~~,~~ or other non-renewable energy resources, but that do not meet one of the above criteria, to be certified as RPS-eligible. For facilities that use no more than 25 percent non-renewable energy simultaneously to generate electricity on a total annual energy input of the fuels, the facility may include an additional 2 percent of that fuel attributed to the de minimis as renewable. For facilities that use more than 25 percent non-renewable energy simultaneously to generate electricity, ~~but~~ only the renewable portion of their generation will count as RPS eligible, and only when the Energy Commission approves a method to measure the renewable portion (see Measuring the Renewable Generation from Multi-Fuel Facilities below).

If a facility meets the above criteria, the Energy Commission will certify or pre-certify the facility ~~as~~ by the fuel technology type of the primary renewable ~~fuel~~ technology used. For example, if a solar thermal electric facility is a QF co-fired with less than 25 percent natural gas and was a PURPA-certified renewable QF before January 1, 2002, ~~(fossil fuel use must meet the criteria of the Public Utility Regulatory Policies Act [PURPA] including not to exceed 25 percent of the fuel use),~~ then the facility will be certified as "solar thermal electric" and all generation may be considered RPS eligible. The certificate issued will note both the annual non-renewable energy used and the eligibility of the renewable and non-renewable portions of the generation.

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1 Section 1253 of the Energy Policy Act of 2005 ("EPAct") added Section 210(m) to Public Utility Regulatory Policies Act of 1978 ("PURPA").

Attachment B: Questions Concerning Possible Changes to the Renewables Portfolio Standard Eligibility Guidebook

Measuring the Renewable Generation From Multi-Fuel Facilities

The Energy Commission will allow one of the methods provided below for measuring the fraction of a multi-fuel facility's electricity output that is attributable to renewable energy resources. An applicant for RPS pre-certification or certification of such a multi-fuel facility must indicate on~~submit with its~~ the application for RPS pre-certification or certification which of these methods ~~a proposal for an appropriate method~~ will be used by the facility to measure the renewable fraction of the facility's generation. Alternatively, an applicant may submit an alternative measurement method if it can be demonstrated to the Energy Commission's satisfaction that the method is superior to the methods discussed below and is the most appropriate method for that technology or fuel. The measurement should be based on the total annual energy input of the energy resources~~fuels~~ and be measurable on a monthly basis. The Energy Commission will evaluate and consider the proposed measurement method as part of the facility's application for pre-certification or certification. The applicant must report the fraction of renewable energy relative to total electricity generation from a multi-fuel facility to WREGIS on a monthly basis.

Combustion technologies and fuel cell technologies: For eligible renewable resources using the combustion of renewable fuels to generate electricity, such as biomass or digester gas, the percentage of the total generation attributable to the RPS-eligible source shall be determined by the ratio of the eligible renewable energy input (MMBTU) to the total energy input (MMBTU) added to generate electricity or improve the efficiency by adding heat to the system, given by the following equation:

$$\text{Percent Renewable} = \frac{\sum(\text{MMBTU})_{\text{RPS}}}{\sum(\text{MMBTU})_{\text{RPS}} + \sum(\text{MMBTU})_{\text{non-RPS}} + \sum\left((\text{MWh})_{\text{grid}} \cdot \frac{3.412\ \text{MMBTU}}{1\ \text{MWh}}\right)}$$

$(MWh)_{grid}$ $= Grid\ Electrictiy\ adding\ heat\ to\ the\ system(MWh)$

$(MMBTU)_{RPS}$ $= RPS\ Eligible\ Renewable\ Fuel(s)\ (MMBTU)$

$(MMBTU)_{non-RPS}$ $= Non - Renewable\ Fuel(s)\ (MMBTU)$

Non-combustion, thermal technologies: Renewable technologies that do not use a combustion process to generate RPS-eligible electricity, such as solar thermal and geothermal technologies, have two possible methods to measure the renewable contribution to the total generation.

Attachment B: Questions Concerning Possible Changes to the Renewables Portfolio Standard Eligibility Guidebook

The first option takes the ratio of the total non-renewable energy (grid electricity and non-renewable energy inputs) ~~contributing thermal energy to the system~~used simultaneously to generate electricity- to the total generation of the facility, and subtracts it from one. The contribution of the non-renewable fuel will be measured by the generation that an equivalent amount of MMBTUs of natural gas would produce at a combined cycle natural gas facility. The result of the equation, provided below, is the contribution attributable to the non-combustion renewable technology.[2]

$$Percent\ Renewable = 1 - \frac{\left[(MMBTU)_{non-RPS} \cdot \frac{1\ MWh}{3.413\ MMBTU} \cdot 0.537 + (MWh)_{grid}\right]}{(MWh)_{Total}}$$

$$(MWH)_{Total} = Total\ electricial\ generation\ of\ all\ generators,$$
$$not\ the\ net\ electricial\ output\ of\ the\ facility(MWh)$$

Please consider and comment on the above proposed changes to the RPS Eligibility Guidebook regarding multi-fuel facilities and the de minimis amount of fossil fuel use that would be allowed and still count 100 percent of the electricity generated by the facilities toward RPS compliance. In addition, please also comment on whether the Energy Commission should consider or reconsider any or all of the following:

a. What fossil fuel or nonrenewable energy resource uses should be counted as contributing to the nonrenewable fuel use in the energy input measurement methodology for generation from multi-fuel facilities;
b. What level of fossil fuels or other nonrenewable energy resources constitutes a "de minimis amount" of fossil fuel or other nonrenewable energy resources that should count as "renewable" for RPS obligations;
c. Should the de minimis level be different for specific facilities based on energy resource, technology, operations, or benefits to the grid? If so, please suggest criteria that is reasonable and describe any parameters;
d. Should a measurement methodology be based on plant operations or efficiencies rather than just actual energy input.

In responding to the above questions, please address the effects, if any, these changes would have on the RPS program, California's grid reliability, existing and future facilities, and other renewable technologies.

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2 These values are identical to those used by the Energy Commission's "Siting, Transmission and Environmental Protection Division" to estimate solar thermal generation from solar thermal plants; the overall calculation has been adapted to include any grid electricity use at the facility and to result in a percent instead of a MWh total. The Siting Division's calculation is X MMBTU x (1 kWh/3,413 BTU) x (1,000,000 BTU/MMBTU) x (1 MWh/1,000 kWh) x 0.537.

Attachment B: Questions Concerning Possible Changes to the Renewables Portfolio Standard Eligibility Guidebook

For reference, excerpts of similar requirements for fossil fuel use at renewable facilities (i.e. the PURPA requirements for renewable Qualifying Facilities and WREGIS Operating Rules) are provided at the end of this attachment.

2. Retroactive Renewable Energy Credits in WREGIS

WREGIS staff has been considering whether to allow previous generation to be uploaded to the WREGIS system after the REC creation period has closed – termed retroactive RECS – beyond what is currently allowable in WREGIS. There are at least two situations that would be affected by a change to current practice.

The WREGIS administrator does not approve a generating unit into the system until after the unit operator declares the commercial online date (COD) for the facility. Under current practice WREGIS will only create RECs for energy generated during the month of COD going forward, and will not create RECs for any period prior to the month of COD. This practice in effect disallows test energy to count toward the creation of a REC because test energy is generated before COD. The Energy Commission is working with WREGIS staff and other stakeholders to change WREGIS' functionality to allow test energy to be used to create RECs.

The second situation applies to a facility that is already online when registering with WREGIS. In this case, WREGIS only accepts generation for the previous 75 days (the length of a reporting period) to count toward a REC. WREGIS stakeholders are currently considering this issue. If WREGIS is changed to allow RECs to be uploaded retroactively (beyond 75 day reporting period):

a. Should the Energy Commission consider allowing generation from facilities already online but not previously registered in WREGIS to upload retroactive RECs for generation prior to the previous 75-day reporting period to count for RPS compliance? If no, should retroactive RECs be limited to test energy? Why or why not?
b. Should there be a time limit (besides the limitation of two years for a Prior Period Adjustment that is hard coded in the WREGIS system) for generation prior to the upload date, and what should the limit be?

3. Biogas Delivery via Injection into the Natural Gas Pipeline System

Currently any biogas production facility that injects biogas into a natural gas pipeline and is able to contractually deliver through any number of physically interconnected pipelines to California or an electric generating facility (as proposed for facilities located outside California in the *Staff Draft RPS Eligibility Guidebook, Fourth Edition*) may be considered as an eligible fuel source for biogas electricity generation at an RPS-eligible

facility. Biogas production facilities are not currently limited to being located in the WECC.

a. Should the Energy Commission consider further restricting the location of eligible biogas production facilities to participate in California's RPS? If so, please suggest reasonable and verifiable parameters.
b. If other restrictions should be considered, what should those restrictions be?
c. Should the use of storage facilities be disallowed in the delivery of biogas to an RPS-eligible biogas electricity generating facility? If yes, why and under what conditions?
d. Should the use of natural gas storage facilities to store biogas in a natural gas pipeline system be treated differently than the transportation of biogas through a natural gas pipeline system? If yes, please explain.

4. Municipal Solid Waste as an Eligible Biomass Feedstock

Electricity generation from facilities utilizing municipal solid waste as a fuel is eligible for the RPS in two technology categories, solid waste combustion and solid waste conversion. A facility using solid waste combustion technology is RPS eligible only if operational before September 1996 and located in Stanislaus County. A facility using solid waste conversion technology must use a gasification conversion process that meets strict eligibility criteria during the conversion process, and must also meet the following requirements:

- The facility accepts and processes "solid waste" as defined in Public Resources Code Section 40191 and is not limited to receiving and processing "source separated" waste as defined in Title 14, California Code of Regulations, Section 17402.5(b)(4).
- The facility processes solid waste from which, as much as possible, all recyclable materials and marketable green waste compostable materials have been removed before the solid waste conversion process.
- All recyclable materials and marketable green waste compostable materials that have been removed from solid waste delivered to the facility are recycled or composted.
- Any local agency sending solid waste to the facility diverted at least 30 percent of all solid waste it collects through solid waste reduction, recycling, and composting.

According to Public Resources Code 40180, "recycling" means the process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace. If MSW is handled and processed into a

different or new product for a purpose other than for a landfill, as determined by the Department of Resources Recycling and Recovery (CalRecycle), then it is no longer regulated by CalRecyle as "solid waste."

A facility utilizing biomass to generate electricity is eligible for the RPS provided that the facility uses a biomass fuel as defined by the Energy Commission. The *Overall Program Guidebook* defines biomass broadly and includes "any organic material not derived from fossil fuels." Because MSW contains a mixture of organic and inorganic and fossil-fuel based materials, the Energy Commission does not consider MSW as an eligible biomass feedstock.

a. If MSW is processed and handled such that CalRecycle makes a determination that it is not solid waste, should the Energy Commission reconsider the MSW as an eligible biomass fuel for the RPS?
b. If the answer to "a" above is "yes," should the material be limited to the organic fraction that remains after recyclables and compostables have been removed?
c. Is there a reasonable amount of fossil fuel fraction that can remain after recyclables and compostables have been removed from MSW such that 100 percent of the material can be considered renewable for purposes of the RPS?
d. Is the fossil fuel fraction remaining after processing measurable? If so, how? What is a reasonable amount of remaining material from fossil fuel that could render 100 percent of the material as an eligible biomass feedstock?

Attachment B: Questions Concerning Possible Changes to the Renewables Portfolio Standard Eligibility Guidebook

Fossil Fuel use of Qualifying Small Power Production Facilities (QFs) Under the Public Utility Regulatory Policies Act[3]

Title 18: Conservation of Power and Water Resources

§ 292.204 Criteria for qualifying small power production facilities.

(b) *Fuel use.* (1)(i) The primary energy source of the facility must be biomass, waste, renewable resources, geothermal resources, or any combination thereof, and 75 percent or more of the total energy input must be from these sources.

(ii) Any primary energy source which, on the basis of its energy content, is 50 percent or more biomass shall be considered biomass.

(2) Use of oil, natural gas and coal by a facility, under section 3(17)(B) of the Federal Power Act, is limited to the minimum amounts of fuel required for ignition, startup, testing, flame stabilization, and control uses, and the minimum amounts of fuel required to alleviate or prevent unanticipated equipment outages, and emergencies, directly affecting the public health, safety, or welfare, (emphasis added) which would result from electric power outages. Such fuel use may not, in the aggregate, exceed 25 percent of the total energy input of the facility (emphasis added) during the 12-month period beginning with the date the facility first produces electric energy and any calendar year subsequent to the year in which the facility first produces electric energy.

[3] (Energy Security Act, Pub. L. 96–294, 94 Stat. 611 (1980) Public Utility Regulatory Policies Act of 1978, 16 U.S.C. 2601, *et seq.,* Energy Supply and Environmental Coordination Act, 15, U.S.C. 791, *et seq.,* Federal Power Act, as amended, 16 U.S.C. 792 *et seq.,* Department of Energy Organization Act, 42 U.S.C. 7101, *et seq.* ; E.O. 12009, 42 FR 46267)

[45 FR 17972, Mar. 20, 1980, as amended by Order 135, 46 FR 19231, Mar. 30, 1981; Order 575, 60 FR 4857, Jan. 25, 1995; Order 732, 75 FR 15966, Mar. 30, 2010]

Attachment B: Questions Concerning Possible Changes to the Renewables Portfolio Standard Eligibility Guidebook

WREGIS Operating Rules[4]

5.3.4 Registration of Multi-Fuel Generating Units

A Multi-Fuel Generating Unit is one that is capable of producing energy using more than one fuel type. The facility must register with WREGIS as a Multi-Fuel Generating Unit, if each of the fuels used is greater than 1% annually on a total heat input basis measured in BTUs, excluding fuels used for start-up. However, Generating Units that use a single renewable fuel type and no more than 2% fossil fuel annually on a total heat input basis are not required to register as Multi-Fuel Generating Units and may have WREGIS Certificates issued for 100 percent of their output. (Emphasis added) If the relative quantities of electricity production (percentage of MWhs produced) from each fuel cannot be measured or calculated, and verified and documented by an independent engineer, the Generating Unit is not eligible to register in WREGIS as a Multi-Fuel Generating Unit, as the Account Holder must enter these relative quantities in WREGIS to create Certificates by fuel type.

For purposes of creating WREGIS Certificates for Multi-Fuel Generating Units, the proportion of Certificates attributable to each fuel type shall be determined consistent with the following rules:

9.8.3.1 Biomass

For biomass co-fired with fossil fuels or using fossil fuels for startup or supplemental firing: In each month, the Certificates for each fuel in each Multi-Fuel Generating Unit will be created in proportion to the ratio of the net heat content of each fuel consumed to the net heat content of all fuel consumed in that month, adjusted to reflect differential heat rates for different fuels, if applicable.

9.8.3.2 Solar Thermal

For solar thermal energy co-fired with fossil fuels, or using fossil fuels for startup or supplemental firing: In each month, the fraction of Certificates for each fossil fuel used in such a facility will be calculated as the ratio of the net heat content of the fuel divided by the plant's heat rate operating on that fuel to the total net electricity production of the Generating Unit during that month. The fraction of Certificates designated as solar thermal will be imputed as the remaining fraction of production not attributed to fossils fuel(s) consumed in the plant during that month.

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[4] http://www.wregis.org/Documents.php, pages 12, 32-33. Accessed July 22, 2010.

Attachment B: Questions Concerning Possible Changes to the Renewables Portfolio Standard Eligibility Guidebook

Renewables Portfolio Standard Eligibility Guidebook, Third Edition

6. Renewable Facilities Using Multiple Fuels

The Energy Commission will allow options for RPS-eligibility of renewable facilities that use multiple fuels or resources to generate electricity, such as co-fired fuels or a mix of fuels that includes fossil fuels. To count 100 percent of the electricity generated toward RPS obligations from such a multi-fuel facility, one of the following three conditions must be met.

1. If the annual fossil fuel use at the facility does NOT exceed a *de minimus* amount, then 100 percent of the electricity production from the facility may count as RPS-eligible. *De minimus* for facilities seeking RPS eligibility is 2 percent of all fuels used and measured on an annual total energy input basis. Note that *de minimus* for facilities seeking RPS eligibility and funding under the Energy Commission's Existing Renewable Facilities Program is 5 percent of all fuels used and measured on an annual energy input basis.

2. In the past, the Energy Commission's Renewable Energy Program provided that renewable facilities using fossil fuels were eligible for funding as long as the percentage of fossil fuel used did not exceed 25 percent of the total energy input of the facility during a given calendar year. The Energy Commission will provide the same treatment under the RPS for renewable facilities that commenced commercial operations before January 1, 2002, were certified and operational as a renewable qualifying small power production facility (QF) pursuant to the federal Public Utility Regulatory Policies Act before January 1, 2002, and are currently certified as a renewable QF facility.

3. Any facility that is developed and awarded a power purchase contract as a result of a 2002/2003 Interim RPS procurement solicitation approved by the CPUC under Decision 02-08-071 and Decision 02-10-062 may use up to 25 percent fossil fuel, measured on an annual total energy input basis, and count 100 percent of the electricity generated as RPS-eligible.

The Energy Commission may allow multi-fuel facilities that do <u>not</u> meet one of the above criteria to be certified as RPS-eligible, but only the renewable portion of their generation will count as RPS eligible, and only when the Energy Commission approves a method to measure the renewable portion. An applicant for RPS pre-certification or certification of such a facility must submit with its application for RPS pre-certification or certification a proposal for an appropriate method to measure the renewable fraction of the facility's generation. The measurement should be based on the total annual energy input of the fuels. The Energy Commission will evaluate and consider the proposed method as part of the facility's application for pre-certification or certification.

If a facility meets the above criteria, the Energy Commission will certify or pre-certify the facility as the fuel type of the renewable fuel used. For example, if a solar thermal electric facility is co-fired with natural gas (fossil fuel use must meet the criteria of the Public Utility Regulatory Policies Act [PURPA] including not to exceed 25 percent of the fuel use), then the facility will be certified as "solar thermal electric." To participate in the RPS, the multi-fuel

facility must be registered in the WREGIS accounting system and comply with WREGIS' requirements, including those for metering, and for reporting and updating the renewable portion of the fuel mix.